

WHAT IS CLAIMED IS:

1 1. A method comprising:

2 establishing an encrypted link between a peripheral device and a software component of
3 an information handling system, wherein establishing the encrypted link includes
4 generating a first seed key common to both the peripheral device and the
5 software component;
6 providing the first seed key and a public encryption key associated with the peripheral
7 device to a hardware controller; and
8 generating in the hardware controller, using the first seed key and the public encryption
9 key, a second seed key different from the first seed key, the second seed key to
10 encrypt communications between the software component and the hardware
11 controller.

1 2. The method as in Claim 1, wherein generating the first seed key is performed by the
2 software component.

1 3. The method as in Claim 2, wherein generating the first seed key includes:
2 using the public encryption key associated with the peripheral device to select a plurality
3 of private encryption keys associated with the software component; and
4 determining the seed key based upon the selected private keys associated with the
5 software component.

1 4. The method as in Claim 1, wherein generating the first seed key is performed by the
2 peripheral device.

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- 1 5. The method as in Claim 4, wherein generating the first seed key includes:
2 using the public encryption key associated with the software component to select from a
3 plurality of private encryption keys associated with the peripheral device; and
4 summing the select private keys associated with the peripheral device.
- 1 6. The method as in Claim 1, wherein establishing an encrypted link includes performing
2 orthogonal encryption of data transmitted to and from the hardware controller.

[illegible]

1 7. The method as in Claim 6, further including:

2 providing the public encryption key associated with the peripheral device and a private
3 decryption key, associated with the software component, to the hardware
4 component; and

5 providing public key encryption between the hardware controller and the
6 peripheral device.

1 8. The method as in Claim 6, wherein the orthogonal encryption is performed using an

2 orthogonal encryption key, wherein the orthogonal encryption key is capable of changing
3 dynamically.

1 9. The method as in Claim 6, wherein the orthogonal encryption is performed using an

2 orthogonal transform function, wherein the orthogonal transform function is capable
3 of changing dynamically.

1 10. The method as in Claim 1, wherein the hardware controller is a video controller.1.

1 11. The method as in Claim 1, wherein the peripheral device is a display device.2.

1 12. The method as in Claim 1, wherein the step of establishing further includes the first

2 seed key being based upon the peripheral device and the information handling system.

1 13. The method as in Claim 12, wherein the first seed key is unique to the peripheral device

2 and the information handling system.3.

- 1 14. A hardware controller comprising:
2 a bus connection to receive a first seed key from a software component within an
3 information handling system;
4 a digital communications connector to connect to a peripheral device and to receive
5 a public encryption key from said peripheral device;
6 a first set of registers to store said first seed key, said first seed key common to both
7 said information handling system and said peripheral device;
8 a second register to store said public encryption key; and
9 a processing circuit to generate, using said first seed key and said public
10 encryption key,
11 a second seed key different from said first seed key, said second seed key
12 to encrypt communications between said software component and said
13 hardware controller.
- 1 15. The hardware controller as in Claim 14, wherein said information handling
2 system generates said first key and wherein generation of said first key includes:
3 using said public encryption key to select a plurality of private encryption keys; and
4 combining said selected private encryption keys.
- 1 16. The hardware controller as in Claim 14, wherein communications between said
2 hardware controller and said information handling system are performed
3 over a system bus.
- 1 17. The hardware controller as in Claim 16, wherein said system bus is a Peripheral
2 Component Interconnect bus.

1 18. The hardware controller as in Claim 14, wherein said digital communications
2 connector is a Digital Video Interface connector.

1 19. The hardware controller as in Claim 14, wherein said hardware controller is a video
2 controller.

1 20. The hardware controller as in Claim 14, wherein said peripheral device is a display
2 device.

1 21. The hardware controller as in Claim 14, wherein encryption is performed using an
2 orthogonal transform.

1 22. The hardware controller as in Claim 21, wherein the orthogonal transform is
2 performed using an orthogonal encryption key, said orthogonal encryption key
3 capable of changing dynamically.

1 23. The hardware controller as in Claim 21, wherein the orthogonal transform is
2 performed using an orthogonal transform function, said orthogonal transform
function capable of changing dynamically.

- 1 24. A system comprising:
2 a processor coupled to a system bus;
3 memory coupled to said system bus for use by said processor;
4 a collection of instructions to be stored in said memory and executed by said
5 processor, said collection of instructions including instructions to establish an
6 encrypted link between said system and a peripheral device, wherein establishing
7 said encrypted link includes generating a first seed key common to both said
8 peripheral device and said system, said collection of instructions further
9 including instructions to deliver said first seed key to a peripheral controller; and
10 a peripheral controller including a bus connection to receive said first seed key;
11 a digital communications link to connect to said peripheral device and to receive a
12 public encryption key from said peripheral device;
13 a first set of registers to store said first seed key;
14 a second register to store said public encryption key; and
15 a processing circuit to generate, using said first seed key and said public encryption
16 key, a second seed key different from said first seed key, said second seed key
17 to encrypt communications between said system and said peripheral controller.
- 1 25. The system as in Claim 24, wherein said memory includes random access memory and
2 read-only memory.20.
- 1 26. The system as in Claim 24, wherein generating a first seed includes:
2 using said public encryption key to select a plurality of private encryption keys; and
3 combining said selected private encryption keys.

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1 27. The system as in Claim 26, wherein said public encryption key and said plurality of
2 private encryption keys are located in said memory.

1 28. The system as in Claim 24, wherein said system bus is a Peripheral Component
2 Interconnect bus.

1 29. The system as in Claim 24, wherein said digital communications link is a Digital Video
2 Interface connector.

1 30. The system as in Claim 24, wherein said peripheral controller is a video controller.

1 31. The system as in Claim 24, wherein said peripheral device is a display device.

1 32. The system as in Claim 24, wherein encryption is performed using an orthogonal
2 transformation.

1 33. The system as in Claim 32, wherein the orthogonal transform is performed using an
2 orthogonal encryption key, said orthogonal encryption key capable of changing
3 dynamically.

1 34. The system as in Claim 32, wherein the orthogonal transform is performed using an
2 orthogonal transform function, said orthogonal transform function capable of changing
3 dynamically.

1 35. The system as in Claim 24, wherein the digital communications link is to receive a
2 public encryption key from said peripheral device and to transmit encrypted digital data
3 to said peripheral device.